

FRESHWATER SHRIMPS FROM VENEZUELA III:
MACROBRACHIUM QUELCHI (DE MAN) AND
EURYRHYNCHUS PEMONI, N. SP.;
(CRUSTACEA: DECAPODA: PALAEMONIDAE)
FROM LA GRAN SABANA

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Abstract.—*Macrobrachium quelchi* (De Man), not collected since the original description, is redescribed and the color pattern is given. *Euryrhynchus pemoni*, new species, the fourth species in the genus, is described.

The material comes from La Gran Sabana, a large highland plateau in the southeast Venezuela (6°15'N, 60°1'W), in the headwaters of rivers that discharge into the Orinoco River basin.

Freshwater palaemonid shrimps represent a large group of crustaceans that inhabit brackish and freshwater habitats throughout the tropics. American species living in brackish water and rivers discharging directly into the sea are, at present, well known (Holthuis 1952; Chace and Hobbs 1969). However, in South America, especially in the Amazon region, there are many tributary streams with almost no connection with the estuarine zone of the main river. Shrimp species from these rivers are not well known, and recent surveys have yielded several new species (Tiefenbacher 1978; Rodriguez 1982; Kensley and Walker 1982; Pereira, in press).

Several species of freshwater shrimps from southern Venezuelan rivers are not dependent on saline water for their development (Rodriguez 1981; Pereira 1982). La Gran Sabana, located in this zone, represents an altiplane (1200 m above sea level) consisting of a vast system of creeks and streams (of both black and clear waters) which drain into the Caroni River. This black-water river is one of the main tributaries of the Orinoco River basin.

This paper describes two interesting palaemonid shrimps from La Gran Sabana. *Macrobrachium quelchi* was known only from the original description in 1900 from the the Upper Mazaruni River (Esequibo River basin) Guyana. The other shrimp represents a new species of *Euryrhynchus*, a fairly homogeneous group of shrimps with an Amazonian distribution (Tieffenbacher 1978). Abbreviations tl and cl are used for total length and carapace length respectively, measured from tip of rostrum to tip of telson, and posterior orbital margin to posterior edge of cephalothorax. MBUCV, Museum of Biology, Central University of Venezuela. USNM, National Museum of Natural History, Smithsonian Institution.

Macrobrachium quelchi (De Man)

Figs. 1, 2, 3, 4

Palaemon (*Macrobrachium*) *quelchi* De Man, 1900:57, pl. 6, figs. 1-8.

Material examined.—MBUCV (XI-2111) 3 ♂, 2 ♀; stream tributary of River Kama. La Gran Sabana, Bolivar State, Venezuela (6°15'N; 60°1'W), 29 Mar 1983,

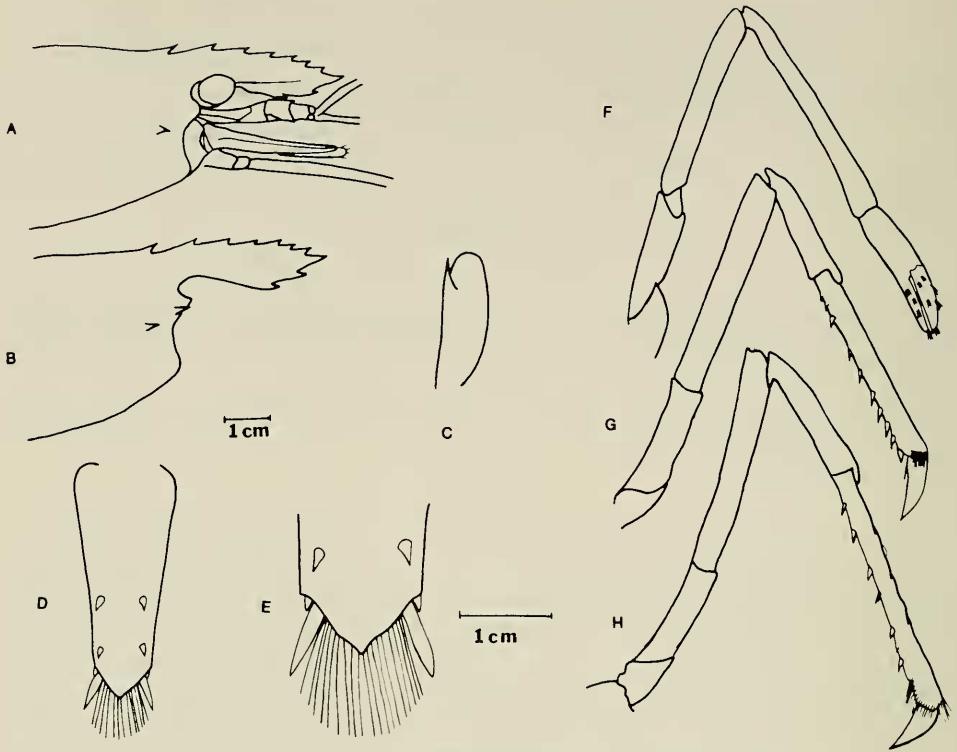


Fig. 1. *Macrobrachium quelchi*: A, Cephalothorax, lateral view; B, Cephalothorax, detail; C, Scaphocerite; D, Telson; E, Telson, detail; F, First pereiopod; G, Third pereiopod; H, Fifth pereiopod.

coll. Guido Pereira and Alfredo Paolillo; MBUCV (XI-2108) 6 ♂, 3 ♀; MBUCV (XI-2112) 3 ♂; same locality. 27 Mar 1983, coll. Guido Pereira and Alfredo Paolillo.

Description.—Rostrum straight, apex reaching distal margin of scaphocerite. Upper border bearing 6–8 regularly distributed teeth, first (proximal) always behind posterior limit of orbit. Lower margin with 2–3 teeth (commonly 2). Carapace smooth. Scaphocerite 3 times longer than wide. Abdomen smooth, posteroventral angle of fifth pleuron not acute. Sixth abdominal segment 1.25 times length of fifth, and 0.6 times length of telson. Telson, with 2 pairs of dorsal spines, situated at $\frac{2}{3}$ and $\frac{2}{5}$ of its length from base. Posterior margin with acute apex and bearing two pairs of lateral spines, inner pair overreaching median apex, and 18–20 plumose setae between the inner spines. First pereiopods slender, overreaching scaphocerite by $\frac{1}{3}$ of distal carpus. Palm cylindrical, about 1.1 times length of dactyl. Carpus 3.2 times length of palm and 1.2 times length of merus. Second pair of pereiopods subequal in shape and length, major leg with distal part of merus reaching anterior border of scaphocerite. Fingers short and strong, gaping when closed; both fingers with conspicuous teeth. Dactyl with a strong tooth at distal third and row of 3–4 small teeth on proximal third. Fixed finger with strong tooth at midlength and row of 3–4 small teeth behind. Fingers without tubercles. Palm cylindrical, 3.5 times longer than high, about 1.8 times length of dactyl,

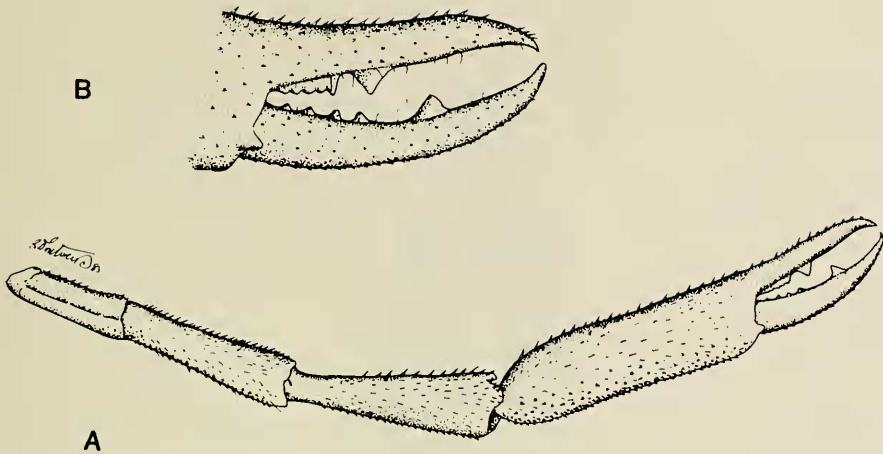


Fig. 2. *Macrobrachium quelchi*: A, Second pereiopod (5 \times); B, Second pereiopod, detail (10 \times).

with numerous longitudinal rows of short spines, those on lower surfaces longer. Carpus 0.75 times length of palm and 1.2 times length of merus, spinulation pattern as in palm. Ischium with only few ventral spines. Third pair of pereiopods with dactyl reaching distal border of scaphocerite. Propodus about 3.2 times length of dactyl and 1.75 times length of carpus, with longitudinal row of 15–17 spines on inner margin. Fifth pair of pereiopods with dactyl reaching border of scaphocerite. Propodus about 4.4 times length of dactyl and 1.7 times length of carpus, with longitudinal row of 15–17 spines on inner margin.

Size.—The largest male measures 52.7 mm tl and 15 mm cl. Females smaller than male.

Fecundity.—One ovigerous female, 50 mm tl and 13 mm cl with 15 oval eggs (2.5 mm largest diameter).

Color.—Adult males with a background pale green color, with non-uniform dark green spots scattered around the body in no definite pattern. Pereiopods 3–5 pale green, with 6–7 dark green horizontal stripes, 1 on ischium, 2–3 on merus

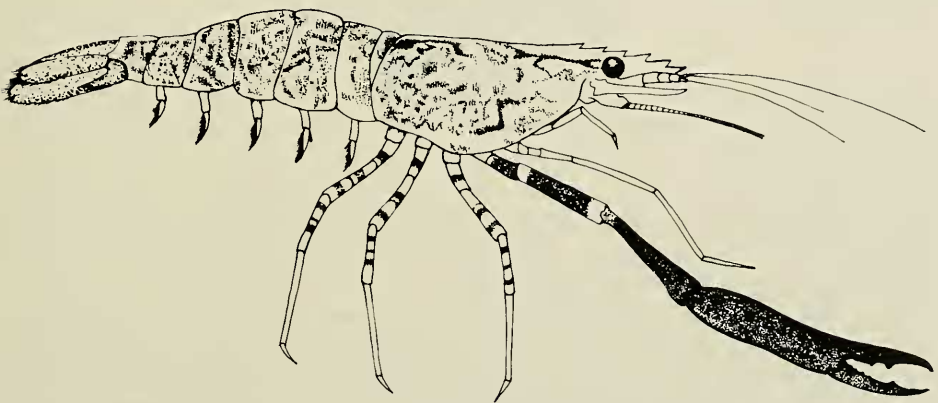


Fig. 3. *Macrobrachium quelchi*: lateral view (1.5 \times).



Fig. 4. *Macrobrachium quelchi*: dorsal view (1.5 \times).

and 3 on carpus. Second pair of legs, generally dark green (almost black), with 2 narrow stripes proximally and distally on merus. Some specimens with a clear green area on dorsal surface of propodus.

Remarks.—Two syntypes of *M. quelchi*, on loan from the British Museum, were studied. There are no major differences between these specimens from Guyana and those found in Venezuela. The palm of the second leg is more inflated in the syntypes, but these animals are larger, more robust and probably older than those from Venezuela.

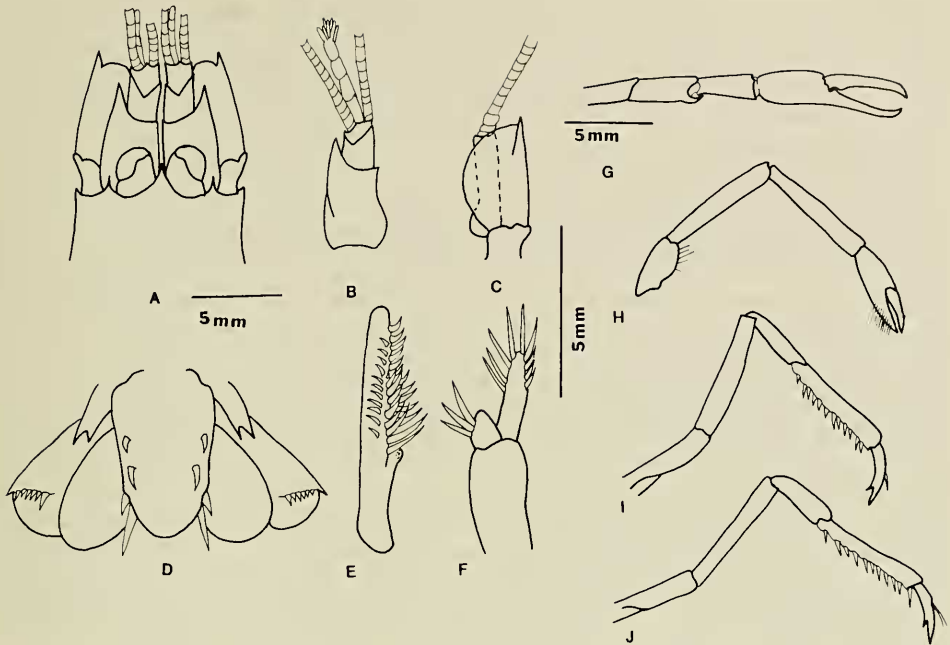


Fig. 5. *Euryrhynchus pemoni*, male paratype: A, Anterior part, dorsal view; B, Antennule; C, Antenna; D, Telson and Uropods; E, Appendix masculina; F, First pleopod; G, Second pereopod; H, First pereopod; I, Third pereopod; J, Fifth pereopod.

Subfamily Euryrhynchinae Holthuis, 1951

Euryrhynchus pemoni, new species

Fig. 5

Material examined. — Holotype ♂ tl 15.5 mm; cl 5.3 mm. USNM 216240, Creek in La Gran Sabana road, between Sn. Rafael Town and Kama Fall, Venezuela (6°15'N, 60°1'W), 27 Mar 1983, coll. Guido Pereira and Alfredo Paolillo. Paratypes: 3 ♀ USNM 216241; 1 ♂, 2 ♀ USNM 216242; 1 ♂ USNM 216243, same data as holotype. 2 ♂, 4 ♀ MBUCV (XI-1980). Creek near Chirimata indigenous town. La Gran Sabana, Venezuela (6°15'N, 60°1'W), 27 Mar 1983, coll. Guido Pereira and Alfredo Paolillo.

Description. — Rostrum depressed, triangular, ending acutely, failing to reach anterior border of eyes. Antennal spines conspicuous, placed slightly above lower orbital angle, tip reaching beyond posterior margin of cornea. Pterygostomian angle forward produced and sharp, failing to reach beyond tip of rostrum. Abdomen smooth, pleura of first 5 somites rounded. Sixth somite 1.6 times as long as fifth, 0.75 times length of telson. Telson broad, with 2 pairs of dorsal spines; anterior pair lying distally on first $\frac{1}{3}$ and posterior pair on beginning of distal $\frac{1}{3}$. Posterior pair longer than anterior pair, placed farther from lateral margin of telson. Posterior margin wide, rounded, with 2 pairs of lateral spines, inner larger than outer; 18–22 plumose setae around margin. Eyes with distinctly pigmented cornea. Antennule peduncle, trisegmented, anterolateral angle of first segment produced into sharp pointed process reaching distal part of second segment. Latter

shorter than third segment, with anterolateral angles produced. Third segment shortest, with 3 antennular flagella, 2 long and slender, with numerous segments; third flagellum broader, short, with 4 similar segments; distal segment with numerous setae on apex. Scaphocerite slightly longer than antennular peduncle, about $\frac{1}{3}$ longer than wide. Outer margin straight, with anterolateral spine slightly overreaching lamella. Mouth parts typical of genus (cf. Holthuis 1966).

First pereiopod, slender, reaching with $\frac{2}{3}$ of carpus beyond scaphocerite, smooth, with only scattered hairs. Fingers 0.9 length of palm, without teeth on cutting edges. Carpus 2.5 times length of palm, about same length as merus. Second legs equal or subequal, reaching with $\frac{1}{3}$ of carpus beyond scaphocerite, smooth, with only scattered hairs. Fingers $\frac{1}{2}$ length of palm; cutting edges smooth except for small tooth basally on both; dactylar tooth less prominent and situated distal to that on fixed finger. Carpus 0.75 length of palm. Merus 1.2 times length of carpus, with prominent mesial spine situated anteromesially on lower surface. Third leg reaching with distal propodus to border of scaphocerite; dactyl bifid, bearing 2 distinct spines on anterior third of outer margin. Propodus 3.1 times length of dactyl, bearing longitudinal row of 9–11 spines on posterior margin. Carpus twice length of dactyl and 0.5 length of propodus. Merus same length as propodus. Fifth pereiopod reaching with dactyl to border of scaphocerite. Dactyl bifid, propodus 3.2 times length of dactyl, with longitudinal row of 9 spines on posterior margin. Carpus, 0.5 times length of propodus; merus same length as propodus.

Female: Similar to male but second legs not so strong.

Size. — Largest male 15.5 mm tl and 5.3 mm cl; largest female 18.5 mm tl and 6.9 mm cl.

Fecundity. — One ovigerous female, 16.6 mm tl and 5.5 mm cl had 11 eggs (oval in shape) with longest diameter 1.7 mm. Another female 15.2 mm tl and 5.3 mm cl has the pleura of the second abdominal segment especially enlarged, forming a brood pouch (sensu Holthuis 1966) containing only one egg with a well developed larva. This egg measured 1.9 mm largest diameter.

Etymology. — The name “pemoni” is derived from the word “Pemon,” a general name for the indigenous people of this region.

Remarks. — The present species is closely related to *E. burchelli* Calman, and *E. wrzeniowskii* Miers. *Euryrhynchus pemoni* can be differentiated by the second legs which have no spines on the carpus and only one on the merus, while there are three spines in *E. burchelli*, one on the carpus and two on the merus, and no spines in *E. wrzeniowskii* (sensu Tiefenbacher 1978). Recently, Kensley and Walker (1982) compared gonopod morphology of the species of *Euryrhynchus*. The gonopod of *E. pemoni* resembles that of *E. burchelli* in that the lateral row of longitudinal spines does not reach the apex, but the present species has 3 rows of longitudinal spines compared to 2 in *E. burchelli*.

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